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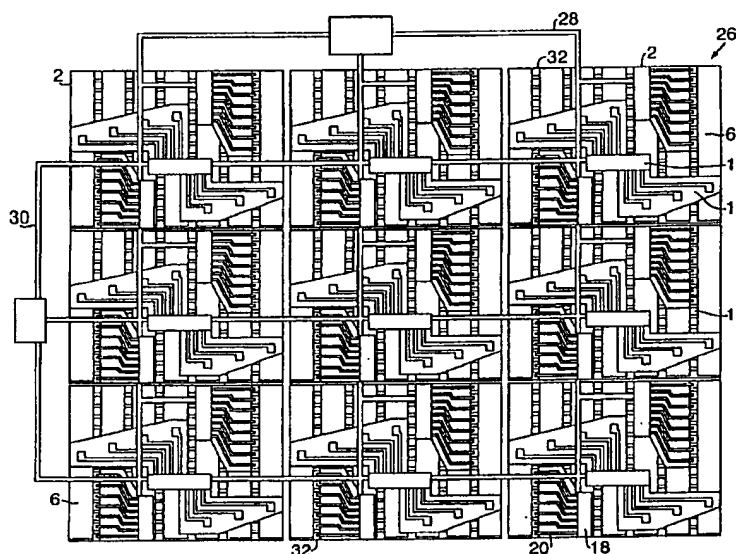
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- (21) International Application Number: **PCT/GB02/00412** (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
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- (71) Applicant (*for all designated States except US*): **SEIKO EPSON CORPORATION** [JP/JP]; 4-1 Nishishinjuku 2-chome, Shinjuku-ku, Tokyo 163-0811 (JP).
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): **KAWASE, Takeo** [JP/GB]; Sheraton House, Castle Park, Cambridge CB3 0AX (GB). Published: — with international search report

[Continued on next page]

(54) Title: MODULAR DISPLAY DEVICE AND ORGANIC THIN-FILM TRANSISTOR



(57) Abstract: The invention provides a display device (26) including a plurality of discrete display segments (2). Each display segment (2) is provided with a drive circuit for driving the display elements arranged within the display area. The display device may be provided either as a passive, active or direct pixel addressed array. By interconnecting a number of display segments, a large area display can be achieved without the requirement for long electrodes. This reduces the electrical resistance and parasitic capacitance of the addressing electrodes, enabling the display to provide improved luminance in a displayed image and to operate at higher speeds, providing improved resolution. An active matrix addressing scheme can also be implemented using relatively low mobility organic thin film transistors.

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20 February 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 02/00412

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L27/00 H01L51/20 H01L51/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 23976 A (SARNOFF CORP) 27 April 2000 (2000-04-27) page 4, line 12 -page 5, line 24 page 9, line 23 -page 10, line 19 page 13, line 28 -page 14, line 30 page 18, line 25 -page 19, line 35 ---	1-7, 27-34, 47,48
P,X	WO 01 61674 A (SARNOFF CORP) 23 August 2001 (2001-08-23) page 5, line 8 -page 11, line 12 ---	1-7, 27-34, 47,48
A	US 5 677 546 A (YU GANG) 14 October 1997 (1997-10-14) column 3, line 6 - line 31; figure 2 --- -/--	49-53



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

7 August 2002

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European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Petitpierre, O

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 02/00412

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 970 318 A (DO LEE MI ET AL) 19 October 1999 (1999-10-19) column 2, line 44 -column 3, line 41	49-53
A	HEBNER T R ET AL: "INK-JET PRINTING OF DOPED POLYMERS FOR ORGANIC LIGHT EMITTING DEVICES" APPLIED PHYSICS LETTERS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 72, no. 5, 2 February 1998 (1998-02-02), pages 519-521, XP000737411 ISSN: 0003-6951 * the whole document *	54
P,X	WO 01 17029 A (E INK CORP) 8 March 2001 (2001-03-08) page 15, line 3 - line 9 page 18, line 6 -page 21, line 11	49-54
P,X	WO 01 27998 A (KONINKL PHILIPS ELECTRONICS NV) 19 April 2001 (2001-04-19) page 3, line 1 -page 5, line 30	49-53

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 02/00412

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-48

Display device composed of a number of display subdevices each having its own drive circuit within the display area of the respective display subdevice, method of manufacturing such a device, and electronic apparatus comprising such a device.

2. Claims: 49-54

Thin-film organic transistor with interdigitated electrode structures, and method of manufacturing such a transistor.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 02/00412

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